

WEATHER OF THE MONTH.

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Atmospheric conditions over the North Pacific Ocean during April were marked by an almost complete absence of any strong air movement. So far as reports at hand show, no storms of importance occurred. There were but few occasions during the month when the wind reached the force of a gale. One of these was from the 8th to the 12th, when a fresh to whole gale was experienced over a limited region in the Gulf of Alaska; another from the 15th to the 20th, when moderate to strong northwesterly gales prevailed along the middle North American coast, extending as far south as the 20th parallel.

On the Asiatic side cyclonic disturbances, apparently of only moderate intensity, occurred during the 1st, 2d, and 3d, the 19th and 20th, and the 29th and 30th. Shipping within the regions affected received wireless warnings of these depressions from Asiatic meteorological services.

Considerable fog prevailed along the northern steamer route. The observer on the U. S. Army transport, *Mount Vernon*, from Vladivostok for San Francisco, commenting on the weather experienced during the voyage, stated that a report of conditions "could be summed up as follows: Continuous fog, dense most of the time, with intervals clear for short periods, but accompanied by light rain squalls."

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average pressure for the month was considerably below the normal at land stations along the American and northern European coasts, and in the Azores, while it was slightly above in the West Indies and Bermuda.

As far as could be judged from reports received, the number of days on which gales were observed over the steamer lanes was not far from the normal, while they were somewhat more frequent than usual in the vicinity of Cape Hatteras.

Fog was apparently less prevalent than usual during the month, especially on the Banks of Newfoundland, where the maximum amount usually occurs; off Nantucket Shoals it was reported on five days, which is not far from the normal.

On the 1st and 2d moderate to strong gales, accompanied by hail and snow, prevailed over a limited region between the 35th and 43d parallels and the 45th and 60th meridians. On the 3d and 4th the weather conditions were comparatively moderate, although on the 4th, a few vessels in the western section of the steamer lanes reported northwesterly gales.

On the 5th, as shown on Chart IX, a low was central near latitude 45°, longitude 37°, with moderate to strong northwest gales in the southwesterly quadrants, the storm area extending as far south as the 32d parallel. On the same day there was a second disturbance central near Norfolk, while southerly winds of gale force were reported from a limited area between the 70th meridian and the Carolina coast.

The storm log of the Italian S. S. *Argentina* is as follows: "Gale began on April 4. Lowest barometer, 29.03 inches at 10 p. m. on the 4th; position, 40° 36' N., 43° 59' W. End of gale on the 5th. Highest force of wind, 11; shifts of wind, SE.-S.-NW."

The observer on the American S. S. *Munra* reports as follows: "Gale began on the 5th. Lowest barometer, 29.48 inches at 4 p. m. on the 5th; position, 32° 30' N., 73° 55' W. End of gale on the 7th. Highest force of wind, 11; shifts of wind, SW.-WNW. At 4 p. m. on the 5th sea increasing; at 10 p. m. ship hove to, very heavy sea running." On the 8th and 9th moderate to strong westerly gales were prevalent over the area between the 35th and 42d parallels and the 50th and 60th meridians, and on the former date easterly winds of about 40 miles an hour were reported from the eastern section of the steamer lanes.

Charts XI to XV, covering the period from April 10 to 14, inclusive, show the progress of an exceptionally well-developed and severe disturbance. That on the 10th was central near latitude 48°, longitude 27°; it drifted slowly eastward and on the 13th the center was near the south coast of Ireland. This storm reached its greatest intensity on the 12th, as shown by the following extracts from storm reports. British S. S. *Lepanto*: "Gale began on the 11th. Lowest barometer, 28.31 inches; position, 49° 43' N., 9° 45' W. End of gale on the 13th. Highest force, 11; shifts of wind, SSE.-S.-SW.-W.-WNW.-W. The observer on the American S. S. *New York City* reports that on the 12th the barometer reading at 1 a. m. was 28.10 inches, wind SE., force 6, and rain. The barometer fell slowly, reaching its lowest reading of 27.98 inches between 3 and 4 a. m.; at the latter hour the wind was from the west, force 4, accompanied by heavy confused sea. At 10 a. m. the barometer had risen to 28.13 inches, and the wind had increased to gale force. The position of the vessel at Greenwich mean noon was given as 50° 56' N., 14° 35' W."

From the 12th to the 14th, as shown on Charts XIII to XV, inclusive, there was a second disturbance of less intensity than the first, that covered a limited area in midocean. The storm log from the American steamship *West Isleta* is as follows: "Gale began on the 13th. Lowest barometer, 29.06 inches, at noon on the 13th; position, 44° 53' N., 36° 45' W. End of gale on the 15th. Highest force of wind, 10; shifts of wind, SW.-N.-NW.-N.-NW."

On the 15th a few reports were received denoting westerly to southwesterly gales between the 10th meridian and the French coast, and the observer at Horta, Azores, reported a northwest gale of over 50 miles, although vessels in the region north of the 40th parallel and between the 15th and 35th meridians experienced moderate weather. From the 16th to 18th a few reports were received from vessels in widely scattered sections of the ocean that had encountered moderate gales, though these were an exception to the general rule.

On the 19th the British steamship *Turcoman*, while about 200 miles west of the south coast of Ireland, encountered a strong westerly gale. The storm log is as follows: "Gale began at 4 a. m. on the 19th. Lowest barometer, 29.22 inches, at 8 a. m. on the 19th; position, 50° 52' N.,

14° 30' W. End of gale at 6 p. m. on the 20th. Highest force of wind, 10; shifts of wind, 2 points." This gale must have been very local in character, as other vessels in the vicinity experienced moderate winds. By the 20th this disturbance had increased considerably in extent and intensity, as strong northwesterly gales prevailed between the 15th meridian and the French coast. On the 23d the American steamship *Macomet* ran into a northwesterly gale about 300 miles east of Bermuda. The storm log is as follows: "Gale began on the 23d. Lowest barometer, 29.74 inches, at 6 a. m. on the 23d; position, 33° 40' N., 58° 03' W. End of gale at 6 p. m. on the 23d. Highest force of wind, 9; shifts of wind, W.-WNW.-N." As can be seen from the report, this storm was of short duration, and it also covered a limited area; one vessel near latitude 38°, longitude 61°, experienced a northwest gale of about 50 miles an hour, while a number of other ships in the vicinity encountered only light to moderate winds.

NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

British Isles.—From the first day, which was dull and rainy in London and many other parts of Great Britain, to the last, on which hailstorms were widespread, April was unsettled, showery, and inclement. * * *

General deficiency of sunshine kept the daytime temperature very low, so that at numerous stations the mean maximum temperature was below the normal. On the other hand, owing to the persistent cloudiness, the nights were unusually warm. * * *

The general rainfall, expressed as a percentage of the average was: England and Wales, 204; Scotland, 100; Ireland, 146. * * *

In London (Camden Square) the mean temperature was 49.3° F., or 1.2° F. above the average. The duration of rainfall, 73.1 hours, was the largest recorded in April since these observations were started in 1881. Evaporation 0.85 inch.¹

Northwestern Europe.—Pressure was high over Iceland and a series of depressions, none of them of great intensity, passed slowly across the British Isles. The most severe occurred at the end of the month and caused gales in the Baltic on the 30th. The result was an unsettled month in western Europe, cold and snowy in Norway, rainy and not particularly mild farther south. * * *¹

On the 24th the station at New York reported a northwest wind of 52 miles an hour, with a barometer reading of 29.64 inches. This disturbance was of limited extent, as no vessel reports were received denoting heavy weather in that locality.

On the 26th a vessel near latitude 37°, longitude 58°, reported a westerly gale of over 50 miles an hour, while over the remainder of the ocean moderate weather prevailed.

The conditions during the rest of the month were comparatively featureless with slight pressure gradients and light winds, except that on the 30th the barometer reading at the Azores was unusually low, while in Iceland it was well above the normal. This reversal of the ordinary conditions was responsible for the easterly winds that prevailed over the intervening territory, although no high velocities were reported.

Switzerland.—Geneva, April 12.—A number of visitors and some scientists are witnessing a strange Alpine phenomenon at Grindelwald, where the famous Grindelwald glacier has been moving into the valley at the rate of 4 to 6 feet daily.

It has already destroyed a pine forest and crushed a stone bridge across the Black Lutschine into atoms. The ice river continues advancing across the water to the upward bank.

The rapid movement is due to the enormous amount of ice and snow on the higher portions of the glacier. The ordinary pace of a glacier is a few yards in 50 years.—*Herald, Elmira, N. Y., April 13, 1920.*

* * * On the 18th very heavy rain fell in Switzerland—91 mm. at Berne and 75 mm. in Lugano. * * *¹

Spitzbergen.—* * * 48 degrees of frost was recorded at Spitzbergen on the 13th, but on the 21st the temperature there rose suddenly to a maximum of 34° F.¹

India.—On April 23 a violent cyclone passed over Manikganj, a small town in Bengal, killing 93 persons.¹

Australia and New Zealand.—Unusually wet weather appears to have prevailed in New Zealand and in Northern and Eastern Australia.¹

¹ The Meteorological Magazine, May, 1920, pp. 75 and 80.

¹ The Meteorological Magazine, May 1920, pp. 75 and 80.

DETAILS OF THE WEATHER OF THE MONTH IN THE UNITED STATES.

CYCLONES AND ANTICYCLONES.

By R. HANSON WEIGHTMAN, Meteorologist.

Cyclones.—The number of LOWS was much greater than the average. The Alberta LOWs, all of which made their appearance over the western portion of that region, gave birth to secondaries in most cases. In the west and central portions of the country, Low tracks were south of the normal, while in the East the tendency was to the northward. The table below gives the number of LOWs by types.

LOWs.

	Alber- ta.	North Paci- fic.	South Paci- fic.	North- ern Rocky Moun- tain.	Colo- rado.	Tex- as.	East Gulf.	South atlan- tic.	Cent- ral.	Total.
April, 1920.....	5.0	2.0	0.0	2.0	2.0	1.0	0.0	3.0	2.0	17.0
Average number 1892-1912.....	3.4	1.5	0.9	0.5	1.3	0.9	0.3	0.6	0.7	10.3

Anticyclones.—The number of HIGHS was also above the average, especially the Alberta type of which there were 7. High pressure centers persisted for considerable periods to the west of Hudson Bay and on the north Pacific coast. The distribution of HIGHS by types is indicated in the table hereunder.

HIGHS.

	North Pacific.	South Pacific.	Alberta.	Plateau and Rocky Moun- tain region.	Hudson Bay.	Total.
April, 1920.....	1.0	2.0	7.0	2.0	0.0	12.0
Average number 1892-1912.....	1.6	1.6	3.1	1.0	0.6	7.9